

FOREWORD

The US-LHC Collaboration Meeting on Accelerator Physics Experiments for Future Hadron Colliders was held at Brookhaven National Laboratory, Upton, New York, on February 22 and 23, 2000. It was attended by 24 participants from 6 institutions.

Future hadron colliders face new challenges. The Meeting focused on plans for accelerator physics experiments at existing machines that are relevant to the operation of the LHC and to the design of future hadron colliders. Synergies between short-term and long-term experimental efforts were identified and experimental groups organized.

The session on Single Particle Investigations, chaired by R. Talman (Cornell), discussed the possibilities of studies and experiments during the upcoming Tevatron and RHIC runs. Emphasis was given to dynamic aperture, beam lifetime and persistent current investigations as well as local nonlinear interaction region corrections and collimator studies.

The session on Colliding Beam Investigations, chaired by M. Syphers (FNAL), discussed possible beam-beam

studies at the Tevatron and RHIC. Experiments were viewed in light of possible LHC problems and theoretical investigations.

The session on Experimental Techniques discussed an array of advanced methods with which beam data can be obtained. Among these were bunch-by-bunch luminosity measurements for the LHC and the processing of turn-by-turn beam position data. These data can be used to implement local coupling corrections, derive nonlinear accelerator models and obtain broad band impedances. New techniques also included AC dipole measurements and transverse echos.

We thank all participants for their contributions to the success of the workshop. We are grateful to Mary Campbell, Rhianna Bianco and Waldo MacKay for their support in organizing the workshop and in preparing the proceedings. We hope that these proceedings are a useful reference for future collaborative work on accelerator physics experiments.

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